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July 27, 2012

Valmichael Leos  
EPA Project Coordinator (6SF-RA)  
United States Environmental Protection Agency  
Region 6  
1445 Ross Avenue Suite 1200  
Dallas, Texas 75202

Re: San Jacinto River Waste Pits Superfund Site Time Critical Removal Action  
TCRA Cap Repair Plan  
CERCLA Docket No. 06-12-10  
Project Number: 090557-01

Dear Mr. Leos:

As previously discussed with you orally on July 20, 2012, and as communicated to you via email on July 23, 2012, an inspection of the San Jacinto River Waste Pits (SJRWP) Time Critical Removal Action (TCRA) cap on July 20, 2012, identified minor erosion of the armor rock material in isolated areas of the western cell berm. Discrete sections of the underlying geotextile were evident in some of these areas; however, the geotextile was observed to be in-tact and no exposure to the underlying waste material was observed. As required under Section 3 of the Operations, Monitoring and Maintenance (OMM) Plan, this letter provides a TCRA Site evaluation and proposed repair plan for conducting the required cap maintenance.

## **TCRA SITE EVALUATION**

Site visits were conducted on July 20, 21, 22, and 24, 2012, to examine the western berm, and to observe conditions of the cap at other locations across the TCRA Site. Attached is a copy of the inspection report from these Site visits (Attachment A). Figure 1 provides a map of the

TCRA Site and shows where maintenance was noted to be necessary. Observations indicated that within the “Maintenance Area” shown on Figure 1 (hereinafter referred to as “Maintenance Area”) there are localized areas of the western berm face subgrade beneath the geotextile where the slope is steeper than in other areas of the berm face.

### **Slope Analysis**

In the Maintenance Area, it was noted during the inspection of the TCRA Site that the underlying subgrade (covered by geotextile) was as steep as 1 horizontal to 1 vertical (1H:1V). Prior to construction of the TCRA cap, the steepest slopes at the TCRA Site were approximately 2H:1V. The evaluation of the stability of 2H:1V slopes was documented in the approved TCRA Removal Action Work Plan (RAWP, Anchor QEA 2011); this evaluation showed acceptable factors of safety. We believe this condition is limited to the Maintenance Area. Similar conditions on the other berms were not observed.

### **River Current Analysis**

An evaluation of river flow rates that have been recorded since the last quarterly inspection (April 2012) was conducted to evaluate whether changes in the hydrodynamic conditions in the river could have contributed to the maintenance issue. Wet weather in the Houston area during July 2012 resulted in elevated storage stage behind the Lake Houston dam. Based on stage heights at the dam and water levels measured in the Houston Ship Channel at the Morgan’s Point tide gauge, the flow in the San Jacinto River was calculated. These flows were compared to the median cap grain size for the Armor Cap B/C material that was specified for the Maintenance Area. The Armor Cap B/C material was found to be stable under the design slope and grain size conditions and under the flows that resulted from the recent wet weather and in larger flow events.

### **Other Physical Factors**

Impact and anthropogenic damage (e.g., boat anchoring, vandalism) were also visually assessed during our inspection. In the Maintenance Area, although the geotextile was visible, the geotextile was clean and undamaged. Impact or anthropogenic damage would be expected to have damaged or marked the underlying geotextile; the TCRA Site inspection did not indicate the cap was affected by these potential impacts.

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## **CAP REPAIR PLAN**

This section describes the cap repair plan, including the following:

- Data collection for cap maintenance planning
- Cap maintenance procedures
- QA/QC procedures during cap maintenance
- Continuing OMM Plan following cap maintenance

### **Data Collection**

In order to develop an appropriate repair plan, additional survey data were collected along the western berm of the TCRA Site. The survey data were used to delineate the horizontal extent of the maintenance activities, and to measure existing slopes along the western berm. This information was used to estimate required volumes for additional material that may be needed to augment the armor layer.

### **Maintenance Procedures**

The affected areas will be addressed by placing additional material along the outer slope of the western berm to maintain a slope of 2H:1V or flatter. Figure 2 presents a plan view showing the extent of the maintenance activities. The final cap surface will be graded to a stable slope configuration of 2H:1V, or flatter so that at least 12 inches of armor rock is covering the geotextile as required per the RAWP. Figure 3 provides a typical cross section detail of the final slope configuration.

Armor material will be placed from the land-side using the TxDOT right-of-way for access. Armor material will be deployed using small excavator and mini-loader equipment as appropriate, within the horizontal limits delineated for the maintenance activities. The contractor will use previously approved placement methods to prevent damage to the geotextile.

The material used for the maintenance activities will be sourced from the Armor Cap C stockpile that is located near the TCRA Site approximately 15 miles away. This material was purchased and stockpiled expressly for maintenance purposes, and has already been tested

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and approved for gradation and chemistry. It consists of natural limestone material of the same gradation that was required for Armor Cap B/C.

Based on the survey data collected, it is estimated that approximately 230 cubic yards (350 tons) of rock will be used to complete the maintenance activities as described in this plan.

### **QA/QC and Reporting**

Cap maintenance activities will be observed and documented using the QA/QC procedures provided in the Construction Quality Assurance Plan (Appendix G of the RAWP) and consistent with procedures used during TCRA construction. Specifically, the following QA/QC procedures will be taken to assure that the cap maintenance activities are in accordance with this Plan:

1. The Maintenance Area will be clearly laid out with visual markings of the horizontal extent of the work area, using data collected during the surveys described above. The horizontal markings will include grade stakes or similar methods that clearly identify the Maintenance Area.
  2. The quantity of cap material imported from the off-Site stockpile will be recorded for each delivery. This quantity will be tabulated in daily summaries so that the daily total of cap material delivery can be quantified. Quantity will be measured in cubic yards, as computed from the capacity of each truck and the estimated percentage full for each load.
  3. After each day of work is completed, the surface area (square footage) of cap placement will be measured. This area will be compared to the volume imported to confirm that enough material was placed to equal or exceed the minimum required cap thickness.
  4. Photographs will be taken daily to document the progress of the work.
  5. A daily report will be prepared summarizing the day's work activity. The format of the report and details recorded will be consistent with the daily reports that were generated during TCRA construction.
  6. Following completion of the maintenance activities, a topographic survey of the top of cap surface will be performed using the same standards and procedures as used for cap monitoring surveys. This survey will be compared to the survey information described above to document that the required thickness of the cap has been restored.
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Upon completion of the maintenance activities, a Maintenance Report will be prepared documenting the work as complete, and submitted to USEPA for review and approval.

### **Continuing OMM Plan**

The western berm will be subject to continuing operations, monitoring, and maintenance as described in the Revised Draft Final Removal Action Completion Report for the TCRA (Anchor QEA 2012). This monitoring will include continued topographic survey, and continued visual observations during inspections and following significant storm events. In addition, monthly visual inspections of the TCRA cap will be conducted for the next six (6) months as an augmentation to the current monitoring plan, the results of which will be included in the TCRA Monthly Report.

We request USEPA's review and approval of this plan, as soon as possible, so that we can initiate the required maintenance to assure the continued function and protection of the TCRA cap. Mobilization of the repair response will begin within one business day of USEPA approval of the proposed repair plan. Please contact us if you have any questions.

Sincerely,



John Laplante for  
David Keith, Project Coordinator  
Anchor QEA, LLC

cc: Barbara Nann, U.S. Environmental Protection Agency  
Philip Slowiak – International Paper Company  
David Moreira and March Smith – McGinnes Industrial Maintenance Corporation

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## FIGURES

Figure 1 – TCRA Site Map

Figure 2 – Cap Repair Plan View

Figure 3 – Typical TCRA Cap Maintenance Detail

## ATTACHMENTS

Attachment A – TCRA Quarterly Monitoring Maintenance Requirements Report

## REFERENCES

Anchor QEA, 2011. *Final Removal Action Work Plan*, San Jacinto River Waste Pits Superfund Site. Prepared for U.S. Environmental Protection Agency Region 6 on behalf of McGinnes Industrial Maintenance Corporation and International Paper Company. Revised February 2011.

Anchor QEA, 2012. *Revised Draft Final Removal Action Completion Report*, San Jacinto River Waste Pits Superfund Site. Prepared McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency Region 6. March 2012.

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## FIGURES

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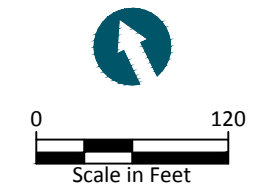
K:\Jobs\090557-San Jacinto\090557-01 - San Jacinto\SURWP Cap Monitoring SAP\TCRA Cap Repair\09055701-TCRA CAP REPAIR-001.dwg FIG 1  
Jul 27, 2012 9:28am dholmer



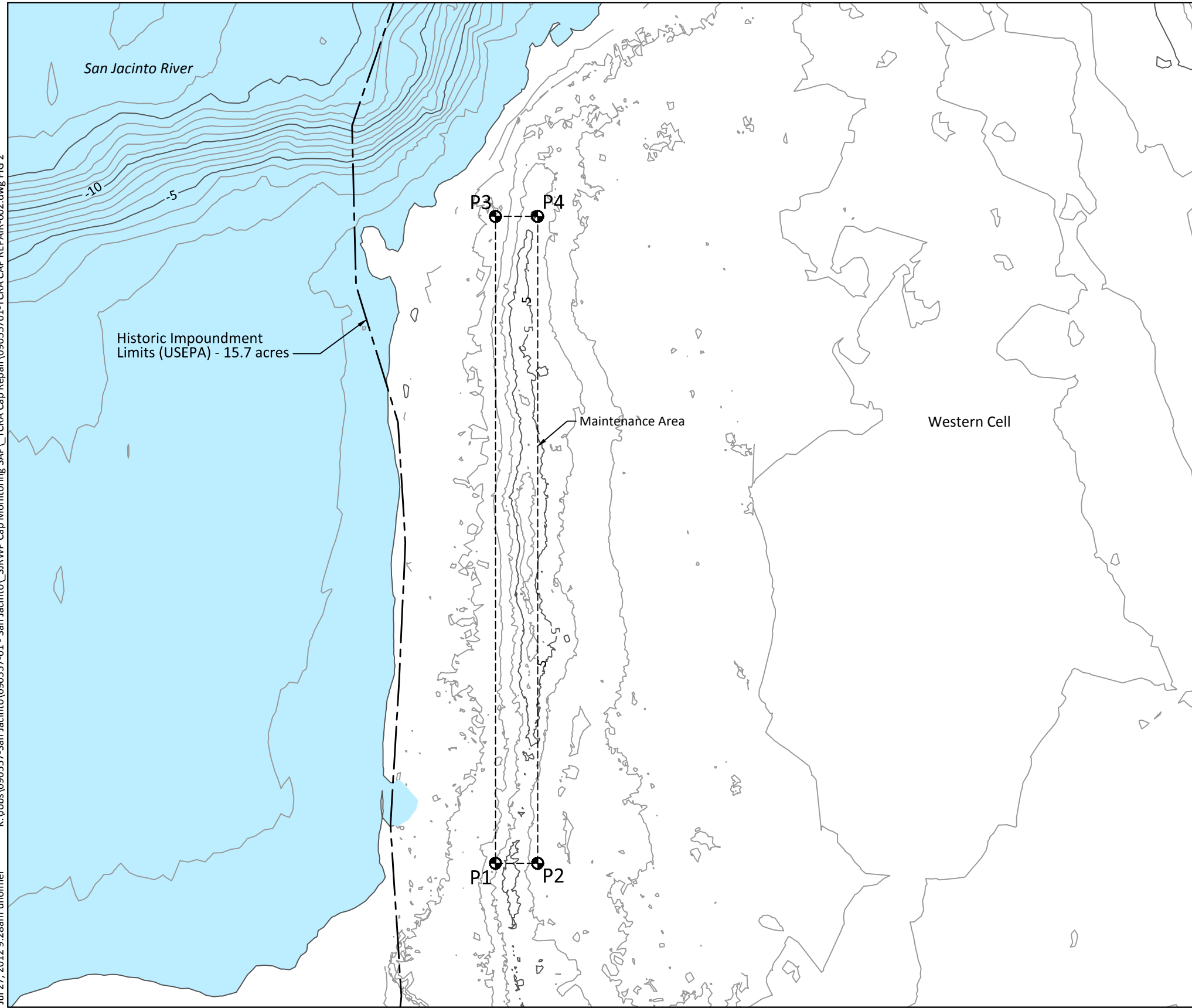
**LEGEND:**

- -5 — Post-Construction Contour, 8/19/11 to 9/2/11 (1-foot interval)
- - - Historic Impoundment Limit (USEPA)
- - - - - Approximate Limits of Maintenance Activity



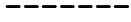

**HORIZONTAL DATUM:** Texas South Central, NAD83. US Survey Feet.  
**VERTICAL DATUM:** NAVD88.



K:\Jobs\090557-San Jacinto\090557-01 - San Jacinto\SURWP Cap Monitoring SAP\TCRA Cap Repair\09055701-TCRA CAP REPAIR-002.dwg FIG 2  
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**LEGEND:**

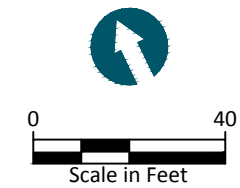
-  Topographic Contours (1-foot interval)
-  Historic Impoundment Limit (USEPA)
-  Approximate Limits of Maintenance Activity
-  Control Point

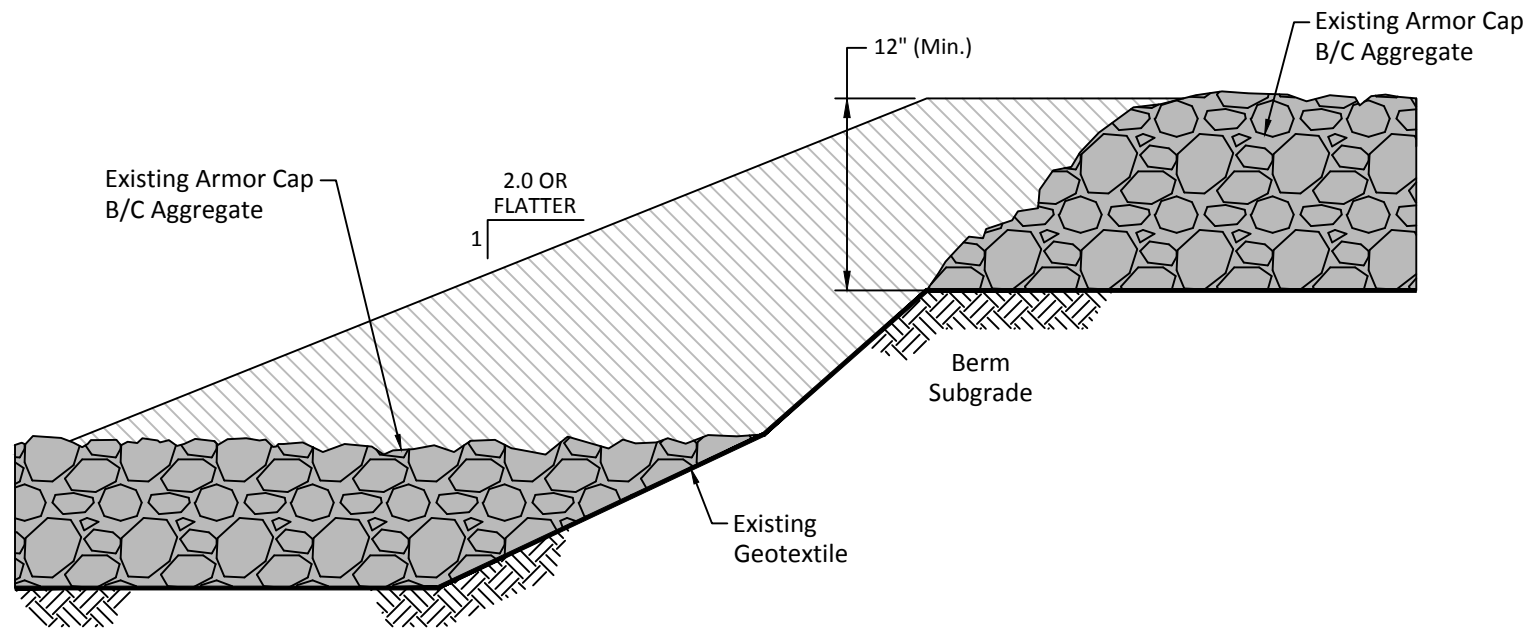
CONTROL POINTS		
POINT #	NORTHING	EASTING
P1	13857459.8	3216663.6
P2	13857453.4	3216677.2
P3	13857667.3	3216762.9
P4	13857660.8	3216776.5

**HORIZONTAL DATUM:** Texas South Central, NAD83. US Survey Feet.

**VERTICAL DATUM:** NAVD88.

**SOURCE:** Survey data shown provided by Hydrographic Surveys dated June 5, 2012 and July 24, 2012.



**LEGEND:**

Additional Overlay of Armor Cap C Material

**NOTES:**

1. Minimum thickness of cap must be at least 12 inches at all locations.
2. Provide final cap top grade slope no steeper than 2.0H:1V.
3. Contractor shall use placement methods that do not damage existing geotextile.
4. Contractor shall use low ground pressure construction equipment and shall minimize maneuvering on the cap surface.
5. Contractor staff operating on site shall be 40-hour HAZWOPER trained.

ATTACHMENT A  
TCRA QUARTERLY MONITORING  
MAINTENANCE REPORT

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## MEMORANDUM

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**To:** Valmichael Leos and Barbara Nann  
U.S. Environmental Protection Agency

**Date:** July 27, 2012

**From:** John Laplante, John Verduin, Wendell Mears,  
and David Keith, Anchor QEA

**Project:** 090557-01

**Cc:** Gary Miller, USEPA  
Philip Slowiak, IP  
March Smith, MIMC  
David Moreira, MIMC

**Re:** Time Critical Removal Action (TCRA), Quarterly Monitoring Maintenance  
Requirements Report

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### Introduction

Visual inspections of the Time Critical Removal Action (TCRA) armored cap at the San Jacinto River Waste Pits Superfund Site (Site) were conducted on July 20, 2012, as part of the post-construction monitoring program for the TCRA. That inspection revealed cap thinning and exposed geotextile in discrete locations along the upland portion of the western edge of the western berm of the Site impoundments. This memorandum describes the visual inspection of July 20, 2012, as well as the subsequent inspections and field observations that were conducted on July 21, 22, and 24, 2012. The Final Quarterly Inspection Report, including descriptions of the fencing, signs, and full bathymetric and topographic survey data, will be provided to the U.S. Environmental Protection Agency (USEPA) as soon as practical after all data associated with these TCRA Site visits are available and surveys are completed. This document focuses on the findings along the western berm of the impoundments as they relate to planned maintenance activities.

### Background

The TCRA was implemented by International Paper Company (IP) and McGinnes Industrial Maintenance Corporation (MIMC) under an Administrative Settlement Agreement and Order on Consent (AOC) with the USEPA – Docket No. 06-12-10, effective May 17, 2010. A

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full description of the TCRA implementation is provided in the associated project documentation:

- Removal Action Work Plan (RAWP; Anchor QEA 2010, 2011)
- Revised Draft Final Removal Action Completion Report (RACR; Anchor QEA 2012)

The inspection summarized in this document was conducted in accordance with the Operations, Monitoring, and Maintenance (OMM) Plan (Appendix N of the RACR – Anchor QEA 2012)<sup>1</sup>. The OMM Plan specifies the timing, pertinent items, tolerances, and procedures for inspection and maintenance of the protective cap installed for the TCRA at the Site.

## **Inspection and Data Collection**

The purpose of this report is to document the inspection and data collection completed and list ongoing efforts leading to development of a proposed repair plan for the protective cap on the western berm.

## **Visual Inspection**

The initial visual inspection included observing the entire exposed area of the armored cap during low tide conditions on July 20, 2012. No discrepancies of the cap, fencing, or signage associated with the TCRA were observed, other than the areas requiring maintenance on the western berm discussed below.

The visual inspection indicated intermittent and discrete areas along the western berm where the cap armor was thin and exposed geotextile was observed. The geotextile layer was clean, undamaged, and there is no evidence that the underlying materials were exposed. Photographs taken during the inspections that document these observations are attached (Figures A-1 and A-2). There was no damage observed to on-Site signage or the perimeter fencing. All other portions of the armored cap that were visible during the inspection were observed to be intact, with no breaches or other damage.

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<sup>1</sup> The OMM Plan is an appendix to the Revised Draft Final RACR, and authorization to implement the OMM Plan was contained in an email from USEPA dated January 18, 2012.

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## Surveys

The horizontal and vertical extent of the segments along the western berm that require maintenance were surveyed, collecting topographic data 25 feet beyond these areas for maintenance planning. The survey was conducted by Hydrographic Consultants, Ltd. on the morning of July 24, 2012. Completion of topographic and bathymetric surveys for the remainder of the Site are scheduled for the week of July 30, 2012, weather permitting.

## References

- Anchor QEA, LLC (Anchor QEA), 2010. *Removal Action Work Plan*, San Jacinto River Waste Pits Superfund Site. Prepared for U.S. Environmental Protection Agency (USEPA) Region 6 on behalf of McGinnes Industrial Maintenance Corporation and International Paper Company. November 2010.
- Anchor QEA, 2011. *Removal Action Work Plan*, San Jacinto River Waste Pits Superfund Site. Prepared for U.S. Environmental Protection Agency (USEPA) Region 6 on behalf of McGinnes Industrial Maintenance Corporation and International Paper Company. Revised February 2011.
- Anchor QEA, 2012. *Revised Draft Final Removal Action Completion Report*, San Jacinto River Waste Pits Superfund Site. Prepared for McGinnes Industrial Maintenance Corporation, International Paper Company, and U.S. Environmental Protection Agency (USEPA) Region 6. Revised March 2012.
- USEPA, 2010. *Administrative Settlement Agreement and Order on Consent for Removal Action*. U.S. Environmental Protection Agency Region 6 CERCLA Docket No. 06-03-10. In the matter of: San Jacinto River Waste Pits Superfund Site Pasadena, Harris County, Texas. International Paper Company and McGinnes Industrial Management Corporation, Respondents.
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# FIGURES

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Photo 1: Walking south atop western berm. Note bulge in geotextile covered slope.



Photo 2: Looking down on exposed fabric shown in Photo 1.



Photo 3: Walking atop western berm. Note bulge and slope of geotextile covered slope seen in background of Photo 1.



Photo 4: Walking atop western berm near southwest corner. Note slope/bulge of geotextile covered slope.



Photo 5: Southwest corner of eastern cell, looking east along the north face of the south berm.



Photo 6: Southwest corner of western cell, looking east atop the south berm.



Photo 7: Looking across the western cell from southwest to north-east. Note warning signs atop the central berm.



Photo 8: North half of central berm looking down slope and to the northeast.